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2                   Claims

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4         1. A method for evaluating the data from a system for  
5 detecting objects, in particular for a motor vehicle, in  
6 which

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8             - with a radar sensor, the radar signals reflected from  
9 the object are processed to ascertain the distance (d) and/or  
10 the relative or approach speed (Cv) of the object,  
11 characterized in that

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13           - the digital signals of at least one channel (I, Q) of  
14 the radar sensor are processed until a first evaluation  
15 capability is obtained as a distance signal (d) or as an  
16 approach speed signal (Cv); and that

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18           - a mode switchover (4) for the evaluation as a  
19 distance signal (d) as an approach speed signal (Cv) is  
20 effected, with which it is defined which data will be  
21 ascertained and made available to an interface (6) between  
22 the radar sensor and a downstream control unit (7).

23

24         2. The method as recited in claim 1, characterized in  
25 that

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27           - the digital signals from at least one channel (I, Q)  
28 of the radar sensor, after each sampling operation, are  
29 delivered to a data buffer with a predetermined slot width  
30 and then, within the slot width, are processed (1, 2) by  
31 means of a median filtration operation; and that

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33           - the thus-processed signals are further processed  
34 jointly in the following evaluation modes (3, 5, 6).

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2       3. The method as recited in claim 1 or 2, characterized  
3 in that

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5       - within a first evaluation mode for distance  
6 measurement (d), the digital signals are subjected to a  
7 background correction and after that a rationalization of the  
8 signal to be evaluated is performed (3).

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10      4. The method as recited in claim 3, characterized in  
11 that

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13      - the digital signals are processed (3) with a matching  
14 filter.

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16      5. The method as recited in one of claims 3 or 4,  
17 characterized in that

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19      - within a second evaluation mode for measuring the  
20 approach speed (Cv) of the object, the background correction  
21 and the rationalization are skipped.

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23      6. The method as recited in the one of the foregoing  
24 claims, characterized in that

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26      - when there is more than one channel (I, Q) in the  
27 radar sensor, a gain compensation (3, 4) is performed at  
28 different levels of the channels (I, Q).

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30      7. The method as recited in the one of the foregoing  
31 claims, characterized in that

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33      - the signals processed in the evaluation modes are  
34 subjected to a data compression (5).

1  
2       8. A circuit arrangement for performing the method as  
3 recited in one of the foregoing claims, characterized in that  
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5           - in the radar sensor, there are storage means and  
6 computation modules for performing and switching over the  
7 evaluation modes; and that

8  
9           - in the radar sensor, there is an interface controller  
10 (6), by which the radar sensor can be connected to a  
11 downstream control unit (7).

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13          9. The circuit arrangement as recited in claim 8,  
14 characterized in that

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16           - the interface controller (6) is constructed such that  
17 the data are prepared for connection to a standardized bus  
18 system (CAN bus).

19  
20          10. A data processing program for performing the method  
21 as recited in one of claims 1 through 7 and/or for  
22 controlling the storage means and/or the digital computation  
23 modules as recited in one of claims 8 or 9.